

**Oracle® Communications
EAGLE Element Management System**

Feature Notice

Release 45.0

910-6730-001 Revision C

February 2014

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EAGLE 5 MS Release 45.0

E5-MS Overview

The EAGLE 5 - Management System (E5-MS) is a Network Management System for EAGLE 5 STP (Signaling Transfer Point). The E5-MS software feature provides real-time element management at a central location and offers consolidated solutions for STP Fault, Configuration, Measurements and Inventory management. The E5-MS is an optional product in the EAGLE 5 product family.

The E5-MS includes integrated Graphical User Interfaces (GUIs) that provides a comprehensive geographical view for operators to monitor and control in a client's network. The user receives real-time performance data from the EAGLE 5 which assist in maintenance operations.

E5-MS Core Framework

The E5-MS is built on the top of a compact, secured and robust framework offering an intuitive and ergonomic environment to operators. It embeds advanced utilities such as automatic discovery interfaces, physical and logical topology maps, security administration tools, drill-down views of Network Elements. This product contains copyright material licensed from ZOHO Corp. <http://www.webnms.com>. All rights to such copyright material rest with ZOHO Corp.

Feature Content

Introduction

Feature Notices are distributed to customers with each new release of software.

This Feature Notice includes a brief overview of the features included in this release, provides the hardware baseline, and explains how to find the Release Notice and other Customer Documentation on the Customer Support Site.

E5-MS Features and Enhanced Interfaces

The Core E5-MS features:

- *Architecture*
- *Network Topology Discovery (EAGLE Discovery)*
- *Fault Management*
- *Measurement Module*
- *Backup and Restore*

- [*Security Administration*](#)

The Optional Enhanced E5-MS Interfaces are:

- [*Inventory Management*](#)
- [*Command Management Interface \(Configuration\)*](#)
- [*Link Utilization Interface*](#)
- [*Reporting Studio*](#)
- [*Report Designer*](#)
- [*North Bound Interfaces*](#)

Architecture

The new E5-MS product is available in a tiered architecture using the following configurations:

- Small:
 - up to 4 Network Elements (2 STP pairs)
 - up to 5 concurrent Users
- Medium:
 - up to 20 Network Elements (10 STP pairs)
 - up to 15 concurrent Users
- Large:
 - up to 50 Network Elements (25 STP pairs)
 - up to 25 concurrent Users

A redundant E5-MS system can be delivered as an option (in a mated pair architecture: active/standby architecture). The redundant architecture includes:

- Data and alarm synchronization between the two systems
- Fail over from active system to standby system
- Switch back to the primary site
- Configuration information and dynamic states (such as, alarms and statistics) will be synchronized between primary and secondary sites

Hardware and Operational System (OS) Requirements

The end user interface is based on a Java client interface and is supported by Internet Explorer 8 and above or Mozilla Firefox 16 and above browsers. The E5-MS requirements are as follows:

- Small System
 - CPU at 2GHz minimum - 1 CPU system supported
 - Memory 2GB or higher - 8 GB recommended
 - Disk space, a minimum of 400MB for software installation (of which 200MB is reserved for swap), however 500GB SAS disks are recommended. (for database and history requirements)
- Medium System
 - CPU at 2GHz minimum - 1 CPU system supported

- Memory 4GB or higher - 8 GB recommended
- Disk space, a minimum of 400MB for software installation (of which 200MB is reserved for swap), however 500GB SAS disks are recommended. (for database and history requirements)
- Large System
 - CPU at 2GHz minimum - 1 CPU system supported
 - Memory 8GB or higher - 16GB recommended
 - Disk space, a minimum of 400MB for software installation (of which 200MB is reserved for swap), however 500GB SAS disks are recommended. (for database and history requirements)

E5-MS application requires Linux 64 bit Operating Systems. It is developed and tested on CentOS distribution.

For system installations and upgrades for the new E5-MS the RedHat Package Manager architecture, Packages, RPM installation and upgrade procedures are available.

Network Topology Discovery (EAGLE Discovery)

The E5-MS provides an EAGLE Discovery GUI interface for a system user to discover and add the EAGLE 5 to the E5-MS for management. The interface collects the layout and configuration of the EAGLE 5 in the monitored network then stores the topology of the EAGLE 5 in the E5-MS DataBase (DB) automatically. The topology data is used by other management modules such as:

- Fault Management
- Configuration (CMI)
- Performance
- Security

The topology collected via EAGLE 5 IPSM cards contains:

- EAGLE 5 name CLI
- Number of shelves
- Card layout including card type, part-number

The inventory information discovered is used to build up a comprehensive geographical view of the EAGLE 5 from the E5-MS GUI Network Maps in the following screens:

- World view
- Continent view
- Frame level view
- Card level view

All files are backed up on the E5-MS secondary server (if one is configured).

Fault Management

The Fault Management module provides the user a graphical interface to monitor multiple EAGLE 5 systems managed by the E5-MS. The real-time updates from the EAGLE 5 are displayed on a Network Events screen and provides detailed information to the E5-MS user.

E5-MS Fault Management provides/supports:

- Both TL1 and SNMP southbound interfaces.
- Storage of all alarms and events history in a DataBase (DB) for a maximum of 30 days.
- A minimum of 200 events per second (200 TPS).
- Configurable and user defined network maps and text based event lists.

View administration

The Fault Management module applies correlation and aggregation rules on events to generate alarms. This feature ensures all events generated are logically grouped to the actual state of the EAGLE 5 and its sub-components. The real-time updates provide:

- Hierarchical views (including trees) to allow fast navigation and direct access to the different layers of views.
- View a list of different events of each Users.
- Graphical view of network resources and sub-resources.
- Detailed EAGLE hardware views (chassis view) showing frames, shelves, cards and peripherals.

The System Administrator is provided a very detailed interface in order to manage individual users' rights, permissions, actions, views, managed elements and command access. Each users can have different views and filters. The fields displayed in the Alarms screen accessible under Fault Management tree node are the:

- Resource
- Sub-Resource
- UAM/UIM/MRN Number
- Severity
- Message
- Protocol
- Device Timestamp
- E5-MS Timestamp
- Count
- Owner
- Acknowledgement Time

The user can customize the fields for viewing a subset of data that satisfies specific criteria in both Alarms and Network Events screens.

Filtering Alarms

- E5-MS provides functionality of Add, Remove or Modify custom views. Custom view are filtered views of Alarms and Network Events GUI based on the following criteria:
 - Event Severity
 - Event Resource and/or Sub-Resource

- Event Alarm Id (Unsolicited Alarm Message Number or Unsolicited Informational Message number)
- Event Text - filter on key word

Synchronization between Primary and Redundant E5-MS servers

The application allows synchronization between the Primary and Redundant E5-MS sites (if the optional mated pair architecture is chosen). This includes (but is not limited to) synchronization for:

- Fault Management users
- Alarm and Event Views

Measurement Module

The E5-MS Measurement Agent parses the performance data from EAGLE 5 Measurements Platform and uses a FTP transfer as .csv files to the E5-MS database. The measurements available include:

- STP System Total Measurements
- Component Measurements
- Component Measurements
- Network Management Measurements
- Daily Availability Measurements
- Availability Measurements
- Daily Maintenance Measurements
- Hourly Maintenance Measurements
- Gateway Measurements

The following is an example of the daily EAGLE STP - SYSTOT Measurements:

- ORIGMSUS - Originated Message Signal Units (MSU) - Total number of outgoing MSUs successfully passed to Message Transfer Part (MTP) level 2 for transmission, while carrying the STP point code in the Originating Point Code (OPC).
- TRMDMSUS - Terminated MSUs - The total number of incoming MSUs carrying the STP point code in the Destination Point Code (DCP).
- THRSWMSU - Through-Switched MSUs - The total number of MSUs that did not carry the STP point code in the OPC or the DPC, and were successfully passed to the MTP level 2 for transmission.
- GTTPERFD - Global Title Translation (GTT) Performed - Usually, the total number of MSUs that successfully completed GTT. Also includes G-Port and Intelligent Network (IN) Portability (INP) MSUs that got a match in either the G-Port, INP, or GTT DB. Sometimes, GTTPERFD indicates the total number of GTTs performed on MSUs that successfully completed GTT, because several GTTs may happen for the same MSU.
- NMSCCPMH - The current daily system-wide peak SCCP message handling load in transaction per second.

The E5-MS keeps a local copy of the files for configurable intervals. All default settings are configurable by the system user. The default settings to archive and delete are as follows:

- Archive CSV files older than 2 days
- Delete archived files older than 30 days

Optional Features

The Reporting Studio and the Report Designer are two optional features designed for reporting the measurements.

To optimize the experience for the end user, the optional FTP/SFTP North Bound Interface is available to transfer the performance and measurement files to the end user application.

Security Administration

The E5-MS Security Administration tool provides the System Administrator to customize an individual user access to E5-MS based on the user login access ID. The secured user access includes the:

- Password management
 - Password complexity management
 - Password expiration rules management
 - Password are stored in a secured and encrypted file (or database)

The System Administrator will configure the following to ensure all system user's IDs, roles, access to the E5-MS have an Audit Trail:

- Authorization for users and groupsviews
- Roles views
- Operations views
- Managed Object views

An activity log is generated each time a user accesses features and functions of the E5-MS. Since the customer owns the Hardware and Operating System, the *root* account and privileged account (Super Users) are owned by the customer.

Backup and Restore

The E5-MS is configured to backup database tables, configuration files and other data on predetermined scheduled intervals.

Storage and Content

The E5-MS backup storage required is dependent on the size of the DataBase with a minimum of 100MB free disk space. The backup .csv files include directories such as html, conf, images, icons, users, LUI and CMI scripts.

Automatic or Manual Backup

The E5-MS robust framework provides the System Administrator an automatic backup daily at 2:00 am. The E5-MS grants access to the System Administrator to manually or automatically define the backup interval for the files, such as, daily, weekly or day of the month.

Once the backup process starts, all other operations should stop. Depending of the size of the EAGLE 5 database files and number of EAGLE 5 STP systems managed and/or E5-MS configured (Small, Medium, Large or Upper Bound), the process should take a minimum of five minutes during normal operations.

Status of Backup

The status of the backup is logged in Audit Trails and can be viewed by a User with User Audit permissions from the E5-MS. The Audit Trail details viewed from the User Audit screen provides the Scenario, User name, Operation name, Audit Time, Status (Success or Failure), Category and Description.

Backup to an External Location

It is recommended to store the backup at an external device (e.g., NAS drive) mounted to the server. The System Administrator will set the destination location of the external backup manually.

Restore in E5-MS

The system user can use the backup files to restore all the database tables. During the restore process, the E5-MS must be shut down to ensure the restore script deletes the database tables and re-creates them using the database backup file.

Inventory Management

The Inventory Management GUI feature is a compliment to the existing E5-MS Network Topology collection. This optional feature is activated from the existing advanced framework of the E5-MS. As the E5-MS Topology collection is stored in the Inventory DataBase, the Inventory Management feature retrieves and displays on a user friendly interface a comprehensive view of the EAGLE 5.

The system user can manage EAGLE 5 inventory such as card layout, shelf occupancy and links. The Inventory Management will permit the system user to manage the EAGLE 5 inventory offline.

Additional Feature

The centralized management view allows the user to manage all deployed equipment, spare card and offline hardware from a central location, this feature is an optional addition to the Inventory Management feature. This will provide the user with a holistic view of all available hardware components.

Command Management Interface (Configuration)

The Command Management Interface (CMI) is an optional feature to enhance the experience of the system users while interfacing with the EAGLE 5. The user can only retrieve events in the E5-MS Core system, however using the CMI enables the user to send commands and continue to interact manually or setup automatic commands to run at a set interval on the EAGLE 5. The CMI includes:

- A fully integrated CMI permissions management to the E5-MS Administrator: access rights for CMI users according to CMI User Group.
- The possibility to Send commands and scripts to EAGLE 5 STP and collect results.
- Manage and review logs containing information about E5-MS activities, including CMI command script execution.

Note: E5-MS User(s) attempting to access an EAGLE 5 system via the CMI without the right permissions will not be granted access, an error message displays and the access will be denied.

Detailed Description

The **Send Command** is listed under **Configuration** on the left pane of the E5-MS GUI for easy access. System users now have the ability to execute commands on EAGLE 5 from E5-MS.

Conveniently located within the Send Command screen are three significant panes. These panes are displayed from top to bottom as followings:

- Select EAGLE 5 screen - enables the user to choose EAGLE 5(s) to the login or logout
- Create Command screen - enables the user to create a command to be sent to EAGLE 5
- Command Execution Results screen - displays the login, logout and other command execution results from EAGLE 5

Select EAGLE(s) pane

The Select EAGLE(s) pane provides two lists:

- Available EAGLE 5 list - provides the names of all the EAGLE 5 systems that are assigned to the logged-in user's usergroup.
- Logged-in EAGLE 5 list - provides the names of all the EAGLE 5 systems that the user has successfully logged in.

Create Command pane

The Create Command pane is a tabbed pane with two tabs available:

- Build Command tab
- Type Command tab

The Build Command tab enables a user to build a valid command to be sent to EAGLE 5 by selecting from either the Command Class or Command drop-down lists.

The Type Command table provides users that are familiar with EAGLE 5 commands a text box. The text box allows the user to type the complete command string quickly and send it to the desired EAGLE 5.

Command Execution Results pane

The Command Execution Results pane is also tabbed with the results of login, logout and other commands. Each tab is associated with the name of each EAGLE 5 a user attempted to login and execute commands.

E5-MS CMI provides log files of all user activity and all commands executed by the users.

The **Category Management** is listed under the Send Command within **Configuration** on the left pane of the E5-MS GUI for easy access. The screen will display all categories created by the user are listed. The user can create, rename, delete and view the scripts a category.

The **Script Management** is listed under Category Management within **Configuration** in the left pane of the E5-MS GUI for easy access. The screen will display a table that list the scripts created by the user and provides the following options:

- View/modify/execute/delete an existing script
- View last execution results for a script
- Create a new script

By default, all the scripts created by the user are listed on the Script Management screen. The user has the option to view scripts in a particular category.

Link Utilization Interface

The Link Utilization Interface (LUI) feature is an optional feature that permits the user to view configured link capacity on the EAGLE 5 system. This is an advanced planning feature enabling the user to modify the defined capacity values then compare against the configured link capacity. The LUI feature is accessible from E5-MS GUI, once it is activated and the user is assigned permissions to the interface.

The user assigned to Link Utilization operations has access to Link Data, On Demand Polling and Threshold Configuration GUIs and the polling script entries on the Schedule Management screen. The LUI performs the following actions:

1. Creation and scheduling of polling scripts for EAGLE 5 managed by E5-MS
2. Polling of EAGLE 5(s) for link data
3. Analyzing and storing the link data in E5-MS database

Polling Scripts creation and scheduling

The CMI is required to create the polling scripts. The following three commands are run on the EAGLE 5 to fetch link capacity data:

- RTRV-SLK - Retrieves all the links and the respective parameters. LOC, LINK, LSN, SLC, TYPE, BPS, and SLKTPS of configured links are available from this command output and are clearly defined in the column headers of the output.
- REPT-STAT-CARD - Defines type and capacity of different link types.
- REPT-STAT-IPTPS - Displays the CONFIG capacity values for IPGWxtype of links and IPSG of cards.

The polling scripts (scheduled and manual) are saved as three types of datafiles, RTRV-SLK, REPT-STAT-CARD and REPT-STAT-IPTPS. All datafiles are created in a directory where LUI validates, analyzes and stores the datafiles. This process will continue with all new datafiles added to the directory. All polling scripts are scheduled to run at 01:10 AM daily.

EAGLE Discovery

The Link Data GUI display the link data of all the EAGLE 5 systems managed by E5-MS. The user selects the EAGLE 5 system from a drop down menu and clicks **Get Links**. The screen provides results in a table format with the following data:

- LOC
- LINK
- LSN
- TYPE
- USER DEFINED CAPACITY
- LINK CAPACITY

On Demand Polling

The On Demand Polling GUI provides the user the ability to select one or more EAGLE 5 systems to start polling simultaneously. The results of the polling displays in the Polling Script Execution Results screen. For each EAGLE 5 the user attempted to run, a new tab is created corresponding to the EAGLE 5 system.

LUI Measurements Thresholding

The LUI Measurements Thresholding feature is an enhancement to the E5-MS Measurement module. This feature optimizes the link data to calculate the utilization of the type of link, linkset and card. The LUI Measurement Thresholding GUI will enable the user to configure Thresholds Alarm Value, Severity Level and Threshold Clear Value and to specify actions to take when the EAGLE link, linkset, or card crosses the thresholds. The alarms generated by LUI Measurements Thresholding feature are visible on the Alarms screen under Fault Management in E5-MS.

Reporting Studio

The Reporting Studio is an optional feature that provides the user a more comprehensive view of the measurements in the E5-MS database. The standard reports embedded in the E5-MS Reporting Studio are:

- Alarm/Event summary
 - Extracts alarm and event history with selective date, time, severity, alarm reference, resource, sub-resource and generate report
 - Statistics per EAGLE, date, time and severity
 - Top 10 alarms and top 10 resources per day, week and month
 - Adapts to the existing E5-MS reports related to alarms and events
- EAGLE STP Measurements
 - STP - Systot
 - Daily Systot reports connecting key counters (granularity of either 30 minutes or 15 minutes depending on STP settings)
 - ORIGMSUS
 - TRMDMSUS
 - THRSWMSU
 - GTTPERFD
 - NMSCCPMH
- Link Utilization Interface Reports
 - Once the LUI feature is ON, reports such as link, linkset and card are available.
- Additional features of the Reporting Studio provide system users a drill down option. For instance, a linkset report can also show a link level.

The user can execute automatic in formats such as:

- HTML, PDF, Text, RTF, XML, JPG
- Optional formats: emails, JAR, XLS, ZIP

Report Designer

The Report Designer is an optional feature to create, customized and manage all the reporting, security and performance related settings on the EAGLE 5 Network. This feature is a compliment to the E5-MS Reporting Studio. The reporting features include:

- Creates reports on ad hoc basis
- Creates reports using a defined template
- Provides a designer interface to create/update templates
- Exports reports in various report formats such as pdf, html, xls, jpeg, png, gif, xml, csv, rtf and txt
- Report template management
- Provides a Repository browser for managing existing report templates and view created reports
- Provides a scheduler interface to user, for scheduling report generation

Reports Remote Interface

The Reports Remote Interface provides the following:

- Ad Hoc Reporting - Allows creating reports on the fly without any predefined template.
- Configuration - Allows a user to manage all the reporting, security and performance related settings.
- Data Source Configuration - Allows configuring the data sources to be used for report generation.
- Repository Browser - Shows listing of existing reporting templates and allows management of them.
- Scheduler - Allows a user the ability of scheduling of report generation by creating named scheduled tasks.
- Report Designer is to used design, create and update report templates by the User.

Optional Features

The Link Utilization Interface Reports is optional. The feature, once the LUI feature is ON, reports information such as link, linkset and card are available.

Additional optional features of the Reporter Studio provide system users a drill down option. For instance, a linkset report can also show a link level.

North Bound Interfaces

The North Bound Interfaces(NBI) (SNMP based) is an optional feature that provides communications of all events (alarms) from both the E5-MS and EAGLE 5 to a registered Network Management System (NMS). Alarms forwarded through the NBI as SNMP v2c traps include:

- Alarms collected from the EAGLE 5 systems
- E5-MS alarms
- Alarms generated by feature such as Measurement Thresholding tier 1.

NBI Features

There are three NBI GUI components launched from the E5-MS GUI that provides the user with the ability to configure and manage a maximum of 10 registered Network Management Systems. The three components included are the following:

- **NBI (SNMP NBI) GUI** opens to two panes used to manage configuration of various parameters required for forwarding SNMP traps to the northbound NMS.
 - **View Existing NMS(s)** pane list all previously configured Network Management Systems.
 - **NMS Configuration** pane provides provisions for NMS Add, Modify and Delete operation.
 - NBI GUI *Add* operation requires the following data for NMS configuration:
 - *NMS Name* should be a logical name.
 - *Hostname* of SNMP Manager or unique IP to receive Traps.
 - *Community* is the SNMP Community contained in Traps.
 - *Port* is the Destination UDP port.
 - *Heartbeat* is the number of seconds between Heartbeat traps.
 - The Match / Filter Criteria is an optional operation with the following configuration:
 - *Resource*: Source of alarm
 - *Sub-resource*: Physical and logical component of source on which the alarm was actually raised
 - *Severity*: Criticality of alarm
 - *Acknowledge*: Alarm is acknowledged or not at E5-MS
 - *UAM/UIM*: UAM/UIM number of alarm received from EAGLE

If the matching / filtering criteria are disabled, all autonomous/resync events shall be forwarded to NMS

- **NBI Agent Configuration GUI** is used for configure NBI agent read and write community strings. The open panes provides a Read and Write text fields, which default to the following:
 - *Read Community*: public
 - *Write Community*: private

The NBI Agent configuration GUI provides two buttons:

- *Configure*: to set the SNMP agent community strings and restart NBI agent.
 - *Cancel*: to cancel the operation.
- **Manage FTP Servers GUI** is allows the user to add, modify, delete and reset the following:
 - *Unique IP address*
 - *Port*
 - *Username Password*
 - *FTP Directory*

Customer Care Center

The Tekelec Customer Care Center is your initial point of contact for all product support needs. A representative takes your call or email, creates a Customer Service Request (CSR) and directs your requests to the Tekelec Technical Assistance Center (TAC). Each CSR includes an individual tracking number. Together with TAC Engineers, the representative will help you resolve your request.

The Customer Care Center is available 24 hours a day, 7 days a week, 365 days a year, and is linked to TAC Engineers around the globe.

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Related Publications

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Locate Product Documentation on the Customer Support Site

Access to Tekelec's Customer Support site is restricted to current Tekelec customers only. This section describes how to log into the Tekelec Customer Support site and locate a document. Viewing the document requires Adobe Acrobat Reader, which can be downloaded at www.adobe.com.

1. Log into the [Tekelec Customer Support](#) site.

Note: If you have not registered for this new site, click the **Register Here** link. Have your customer number available. The response time for registration requests is 24 to 48 hours.

2. Click the **Product Support** tab.
3. Use the Search field to locate a document by its part number, release number, document name, or document type. The Search field accepts both full and partial entries.
4. Click a subject folder to browse through a list of related files.

5. To download a file to your location, right-click the file name and select **Save Target As**.